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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,403	06/15/2001	Mamoru Suzuki	7217/64724	8321

7590 02/04/2003
COOPER & DUNHAM LLP
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EXAMINER

TIBBITS, PIA FLORENCE

ART UNIT PAPER NUMBER

2838

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/882,403

Applicant(s)

SUZUKI ET AL.

Examiner

Pia F Tibbits

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

This Office action is in answer to the amendment filed January 6, 2003. Claims 4-6 are elected.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the reading means, the updating means, and the setting means must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81, which reflects every feature of the invention specified in the claims (claims 4 and 5), and the specific method steps specified in the claims (claim 6). No new matter may be introduced in the required drawing.

Specification

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. 35 U.S.C. 112, first paragraph, requires the

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specification to be written in "full, clear, concise, and exact terms." The specification describes a combination of the two embodiments, which are however claimed separately, i.e., the microcomputer 17 switching to sleep mode if no battery charging/discharging takes place within a predetermined time. The specification does not describe clearly the apparatus and method recited in claims 4-6. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph.

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed: the elected claims recite determining a battery remaining capacity.

7. The abstract of the disclosure is objected to because it describes controlling a battery charging/discharging current by a microcomputer that switches to sleep mode if no charging/discharging current is supplied within a predetermined time, and controls a timer so as to start measuring the standby time of the battery. Correction is required. See MPEP § 608.01(b).

Claim Objections

8. Claim 4 is objected to because of the following informalities: in line 6, --- the remaining capacity value--- to replace "the a remaining capacity value". Appropriate correction is required.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 4-6, as best as they can be understood at this time, are rejected under 35 U.S.C. 103(a) as being unpatentable over Friel et al. [6025695].

Friel discloses a battery charging/discharging apparatus for determining a remaining capacity of a battery 28, comprising: detecting means for detecting a cell voltage/resistor R_2 in fig.2; reading means for reading a remaining capacity value based on the cell voltage detected by said detecting means/A/D converter 60; comparing means for comparing the a remaining capacity value read by said reading means with a currently stored remaining capacity value/hybrid IC 32; and updating means for updating the currently stored remaining capacity value based on a result of said comparing means//hybrid IC 32.

The patent describes a smart battery utilizing a hybrid integrated chip (IC) containing an embedded microprocessor and a novel analog to digital connector which receives analog signals from the battery and converts them to digital signals representative of battery voltage, current and temperature. The smart battery microprocessor then calculates actual charge parameters over time from these digital signals according to a predetermined algorithm in which CAP_{rem} is the remaining capacity of the battery, **which is continuously assigned a new value to reflect adjustments** for effective charge, discharge, and self discharge (column 14, lines 55-65). Fig.3 describes the voltage levels representing battery temperature, current and voltage being applied to a switching network 55. This switching network then applies these voltage levels, one at a time and in a defined sequence, to an A/D converter, and this converter converts these analog voltage levels to raw digital data values representing battery temperature, current and voltage. These raw data values are transmitted to register 61 for temporary storage and from which the data values are available to the microprocessor. The specific lengths of time that the converter processes the applied analog signals are under the control of clock signals transmitted to the converter from an internal clock 48.

With regard to the patent using battery voltage, current and temperature inputs for establishing a remaining capacity value CAP_{rem} : eliminating battery current and temperature inputs, cited in the Friel reference, applicant neither extends the life of the batteries being charged, nor makes it easier to determine the remaining battery capacity with high accuracy, which is the object of his invention, as cited in the disclosure. Therefore it would be obvious to one skilled in the art at the time the invention was made that the elimination of an element and its function in a combination is an obvious expedient if the

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remaining elements perform the same functions as before. See *In Re Karlson*, 136 USPQ 184 (CCPA 1963), *In Re Wilson*, 153 USPQ 740 (CCPA 1967), and *Ex Parte Rainu*, 168 USPQ 375 (PTO Bd. of App. 1969).

With respect to the method claim 6: the method steps will be met during the normal operation of the apparatus described above.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in PTO-892 and not mentioned above disclose related apparatus.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Pia Tibbits whose telephone number is (703) 308-7305. If unavailable, contact the Supervisory Patent Examiner Mike Sherry whose telephone number is (703) 308-1680.

14. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (703) 308-0956.

Papers related to Technology Center 2800 applications only may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform to the notice published in the

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Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (703) 308-7722 or (703) 308-7724.

A handwritten signature in black ink, appearing to read "Pia Tibbits".

PFT

Pia Tibbits

January 30, 2003

Patent Examiner